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ABSTRACT

This paper discusses the limitations of manpower planning activity as a source of policy criteria and suggests some directions for improving the state of the art. Sections I and II of the paper begin with a general discussion of the conceptual and institutional requisites of manpower planning in policy analysis and formulation. Section III extends the discussion by examining the current state of the art in estimating future manpower requirements and the effects of conceptual and institutional factors on knowledge generation and policy analysis. It also examines the effects of these constraints on estimations of future manpower supplies and the interaction of supply and requirements. Section IV suggests some possible means for enhancing the policy value of manpower planning. (Author/WL)

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THE POLICY VALUE OF MANPOWER PLANNING IN THE UNITED STATES*

by

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I. Introduction

The Conference discussion thus far has been focused on the first term of the Conference title: the modeling of specific or generalized aspects of labor markets. This paper is concerned with the second term: the use of these component models in simulating change and their value or utility as policy instruments in the economic and political context of the United States. Our objective is to discuss the limitations of manpower planning activity as a source of policy criteria and to suggest some directions for improving the state of the art.

This discussion draws on our recent analysis of the practice of manpower forecasting in the United States,[1] and on a long experience in manpower planning in developing countries. The American study involved an assessment of the policy relevance of nearly 400 manpower plans or forecasts made between 1965 and 1973, and an evaluation of the theoretical and empirical base for planning. We found that the current practice has only limited policy value, and that the knowledge base is not a primary constraint on the state of the art. Further,

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the study revealed a large gap between the current state of the planning art in the United States and its practice in the developing countries.

That research and experience leads us to the conclusion that the primary factors which limit the usefulness of manpower planning to the policy process are conceptual and institutional in nature. In particular, manpower planning in the United States is limited by the concept of planning as a decision instrument, and by institutional gaps in the policy and operating systems that planning intends to serve. One consequence is that the range of policy concerns that can be served by common types of planning models--some of which were described earlier in this Conference--is extremely limited. Another is that investments in model building or in the knowledge base essential to model specification will produce only marginal returns to the policy process. Indeed, the more important limitations of the existing knowledge base are also functions of the conceptual and institutional factors that limit the practice of planning.

In view of that conclusion, it is essential that we move the discussion beyond the consideration of forecasts and models to a broader consideration of the foundations of manpower plans. Accordingly, this paper begins with a general discussion of the conceptual and institutional requisites of manpower planning in policy analysis and formulation. Section III extends the discussion by examining the current state of the art in estimating future manpower requirements and the effects of conceptual and institutional factors on knowledge

generation and policy analysis. It also examines the effects of these constraints on estimations of future manpower supplies and the interaction of supply and requirements. Section IV suggests some possible means for enhancing the policy value of manpower planning.

II. Some General Observations

In the context of policy formation, manpower projections are considered as analytic criteria which serve the development of specific manpower policies or strategies. These strategies will differ with respect to policy issues and their corrollary effects on the scope of inquiry. For the immediate purpose, we may suppose that strategies aim at minimizing uncertainty and hence the cost of labor market adjustment, sustaining progress toward system goals, and inducing greater rationality in public and private decision making. Likewise, we may distinguish global strategies relating to the development and utilization of the entire human resource stock, and sectoral strategies delineated in terms of industrial and/or occupational coverage. In all cases, strategies are designed to suggest necessary and sufficient policy actions (interventions) to achieve balance between desirable and actual patterns of manpower use over time. This task requires a conceptual and analytic framework which treats policy formation as a holistic process and provides operational criteria for rationalizing the complex set of institutions that implement policy. The preparation of manpower strategies, in other words, encompasses both a set of technical (analytic) activities and a set of institutional relationships

among relevant policy makers. As will be seen, the dual nature of these requirements is critical to efforts to improve the state of the art.

In this context, we believe that manpower planning is necessarily an integral component of general economic and social planning. As such, manpower planners help specify the set of social goals and priorities to which policy variables (means) must respond, the technical and social constraints on the choice of means, the human performance roles implicit in the means, the human attributes associated with those roles, and the optimal means for attribute development. Social policy may act to rationalize these process elements in various ways. For instance, it may act to change social preference functions, influence time paths, constrain or expand the choice of means, modify qualification standards, or adjust resource endowments. The choice of intervention possibilities as well as their relative weights and timing constitute a decision strategy. This strategic role is the primary function of planning.

In order to perform this strategic/analytic function, the planning process should encompass the set of institutions that elaborate micro-policy and implement macro-policy. This requirement is not simply to assure the implementation of planning decisions. In our view, the conventional distinction between plan preparation and implementation is not very useful and its organizational implications are injurious to the policy process. In a highly complex socio-economic system, acts of planning and implementation are not independent or sequential events.

Put differently, a policy proposal must be both technically and institutionally feasible. Operating institutions are the best source of the technical information basic to analysis, and they are the primary source of institutional or organization feasibility criteria. In a pluralistic and highly decentralized decision structure, policy criteria must include or be accompanied by a set of incentives, i.e., penalties and rewards, to assure that the criteria are utilized in some appropriate fashion. As shall be seen, we are particularly concerned in this regard with the use of manpower projections to rationalize decisions arrived at on other grounds.

From the perspective of this framework, the current practice of manpower planning in the United States appears to have a very limited policy value. For example, the BLS Industry/Occupation Matrix is the dominant and technically most sophisticated planning model in use.[2] This approach links an aggregate econometric forecasting model to an input-output model to estimate sectoral output and employment, and links the employment estimates to an industry-occupation matrix to estimate the occupational structure of employment. These are interpreted as the manpower requirements of a full-capacity growth rate in output, given the assumptions of final demand, the distribution of public sector expenditures, the savings and investment parameters of the macro-model, and the technical coefficients of the input-output model.

The major limitation of the BLS Matrix does not stem from problems of estimation, but from the fact that it is not linked to supply systems in any direct way. One consequence is that the estimates of manpower requirements are independent of potential supply conditions and do not reflect the malleability of supply, i.e., substitution possibilities. A more important consequence is that the model cannot evaluate, on feasibility grounds, the structural assumptions of the projection or provide unambiguous output criteria for human resource development systems. These limitations are compounded when the National Matrix is applied to local or regional labor markets, where supply estimates require heroic assumptions concerning labor mobility.

The policy utility of this model is also limited by the static and somewhat mechanical form of the techniques employed in estimating sector output and employment. Although conceptually the model can be used to simulate alternative patterns of growth, it has not been used in this way. The structure of private sector final demand is extrapolated from historical data, and public sector output is estimated by trend analysis of employment. Similarly, the effects of technical change on the occupational structure of employment is estimated by inter-censal trends and is not specified in any discrete form. Consequently, neither the structure of activity nor technology can be treated as policy variables. With the exception of macro-economic variables, the single human resource policy variable in the model is the manpower supply. That variable is specified only in the form of relative growth rates for specific occupations. Their relation to supply flows or the capacity of supply systems must be interpreted by the user.

This example illustrates our contention that the limited policy value of manpower planning in the United States is not primarily a function of limitations of the technical knowledge base essential to estimation procedures--limitations which may be overcome by additional research. Rather, it reflects a fundamental disjuncture between the concept or perception of planning as a decision instrument and the institutional environment for policy formation. It is our hypothesis, moreover, that this disjuncture is a function of the strength of the market paradigm on the generation of policy-relevant knowledge and the decision process in the public sector. By this we mean generally the impact that economic theory has had on the way in which we perceive social problems and devise solutions for them.

At root, the problem stems from the preoccupation of economics with static allocation questions and its failure to develop a unified, consistent theory of social process. In particular, the failure of economics to integrate macro and micro analysis and consequently to move toward a dynamic process theory has separated policy into an aggregate employment policy and a disaggregate manpower policy. It is impossible to conceive of a pattern of economic growth that does not involve structural change, or a significant change in the structure of activity that does not affect the total. Yet these changes are treated independently in conventional economic constructs and, as a result, in policy formation. The state of economic theory has also constrained the integration of economics and other social sciences, and public policy based in economic constructs reflects their simplistic

psychological, sociological and cultural assumptions. For instance, human resources are defined in terms of functional skills in a narrow job context. Change is a simple function of profit maximizing behavior and the institutional and cultural context is static. Since the interdependence of human resource institutions is not specified in theory, it is not reflected in practice. Policy responses to problems of unemployment or growth reflect little sensitivity to the interdependence between educational, training, health, community, and labor market institutions.

As a consequence of the strength of the market paradigm, we have no institutional capacity for estimating a long-term social welfare function, for specifying social goals and priorities or for examining and evaluating the social implications of alternative patterns of technical change. Even if such institutions did exist, there would remain an institutional gap between policy making and implementing institutions. Those institutions that develop policy affecting manpower requirements are largely independent of and isolated from those that generate supply decisions. There is no current means by which these decisions can interact to produce an optimal long-term condition or evaluate alternative strategies and means. Furthermore, the supply system is so highly decentralized that it is incapable of responding in rational ways to external policy criteria. The use of the system term is a semantic convenience rather than a descriptor.

III. Some Specific Problems

The extent to which both conceptual and institutional factors limit the state of the planning art is manifest in each of the major components or elements of planning activity: the specification of manpower goal functions and potential supplies. This section considers in more specific fashion several of the important problems on each side of the planning equation. Let us note that space limitations require us to omit some topics and preclude more than a cursory glance at others. We have concentrated, as a result, on those facets which are fundamental to the notion of planning and points where conceptual and institutional changes might lead to substantial improvements in the state of the art.

The Goals Function

Clearly, the specification of an objective or goals function is central to development of manpower strategies. Such functions specify in explicit form a set of desired outcomes and their manpower implications, i.e., they contain both a set of estimates of the level and structure of output and a transformation algorithm which estimates the alternative manpower configurations implied in the output statements. As we envisage the process, these are not simply forecasts; rather, they represent an intensive search in time for a) potential or desirable changes in private and public preferences, and b) the technical alternatives for delivering a prescribed set of outputs. In the absence of such a search, the policy value of the manpower plan is reduced exclusively to recommended action on supply side variables.

Furthermore, those recommendations may not be persuasive, since they can be justified only in reference to achieving specific output targets, ceteris paribus. Thus, trade-offs on the goals or "requirements" side must be considered because the rationale of the plan and the policy instruments included within its purview hinge on it. Two particularly important points imbedded in this notion are discerning shifts in preference fields and treating technology as a policy variable. Generally speaking, most current planning activities assume, as in market analysis, that preferences and technology are givens. Headway in the planning art requires a change in the way in which we perceive and treat these variables.

The structure of output.--Consider initially the question of preferences and changes in the structure of output. The impact of changes in the structure of output on the level and occupational structure of employment is not inconsequential: it is estimated that more than half of the historical change in the occupational structure is a function of change in the product mix.[3] Yet, current methods of projecting structural change or in estimating a future structure of output belies this impact.

The principal difficulty in this regard is that conventional forms of analysis rely heavily (if not exclusively) on estimates of market demand as revealed (individual) preferences for goods and services. While surely such demands cannot be ignored, they are not sufficient for the specification of outputs. They are insufficient methodologically because consumption is treated simply as a function of

income or relative prices, which implies that preferences are independent of sociological, psychological and environmental factors or that they are constants. They are insufficient conceptually because of the growing importance of collective goods and services in the mix of final outputs.

This conceptual difficulty is exacerbated by the absence, at the moment, of a relevant theoretical framework for estimating preferences for collective goods and services. This is especially critical since the concept of preferences revealed through prior decisions has little utility when there is no direct link between consumer choice and outcomes. Consequently, the need to develop a more meaningful construct and more effective estimating procedures is a first order requisite. The use of consumer survey techniques and opinion polling, the development of Delphi procedures and goal analysis for evaluating trade-off choices reflects movement in this direction. Nonetheless, these techniques are operationally limited at the present time by the lack of a theory of public choice, particularly one that interprets the public welfare in ways different than an aggregative function of individual utilities.

A related constraint is the problem of measurement in the treatment of output statements containing intangible products and services. Of the latter, two areas of particular importance are education and health services. Although health services absorb an increasing proportion of the National Income, we have no precise or even meaningful measure of its output. Conceptually, health services should produce--in conjunction

with other services and the environment--states of health. Since such states cannot be specified empirically, they are usually specified in simple proxy forms and in terms of physical inputs or expenditures, neither of which has policy value. Similarly, the outputs of educational systems are traditionally specified as body counts, degrees granted, or hours of instruction. In the absence of any explicit measure of the quality of the product, such measures have only limited policy value. Even less tangible outputs are illustrated in the current concern with environment, and reflected in the recent attempts to specify and measure the quality of life. Such measures are in effect attempts to incorporate intangibles into a social utility function. They must include currently non-measurable arguments such as psychological states. Conditions of this type are not readily inferred from expenditures or from levels of activity; they can only be derived indirectly from attitude surveys, opinion polls or comparable instruments.

All current techniques of valuing output are short-term. They evaluate both current and future events in terms of the existing value structure. In long-term planning, values must be treated as variables, if future structures of output are intended to be optimal in terms of utility. In other words, planners must be able to specify the shift variables affecting utility functions and estimate changes in these variables over time. Much of the recent research in futures analysis assumes that values respond to changes in technology. They extrapolate technological change and impute a "relevant" set of values,

yet the relationship between value changes and environmental changes is not well documented.

These brief comments suggest the conceptual and empirical requirements for specifying long-term changes in the structure of output are significantly more complex than an examination of current practice would suggest. In this light, it is easy to see that improvements in the current state of the art will require more than methodological refinement of existing models. Indeed, further refinement of conventional economic specification of consumer behavior in a market context should be accorded a very low priority in this regard. Moreover, the state of the art will not be improved in the absence of an appropriate institutional means for specifying a long-term social-welfare function. Since the institutional implications extend beyond the question of output specification, we delay a discussion of them until we have examined other elements of the planning process.

Transformation.--The output vector, however estimated, must be translated or transformed into input statements, taken here to mean a vector of associated manpower requirements. Not unlike the earlier step, this phase of goals specification has been treated in conceptually limited form and, for lack of an appropriate institutional mechanism, has rarely entered the domain of policy analysis per se. Unlike the formulation of goal statements, however, it is an element which might be refined conceptually by applying economic constructs--in particular, the notion of the production function. In order to understand this point, it must be recognized that methodologically most manpower plans

have used the prevailing or trend adjusted ratio of inputs to output (i.e., the input coefficient or its reciprocal, the productivity rate) to estimate the sectoral distribution and occupational composition of employment. This procedure has led to a number of well-known conceptual arguments relating to the desirability of preparing manpower plans.[5] Since the policy value of manpower plans hinges on these arguments, several observations are warranted here.

To begin with, the typical transform procedure has been criticized because it implies zero elasticities of substitution and/or zero or near zero elasticities of labor demand, and thereby over-emphasizes technological rigidities in determining patterns of manpower utilization. This criticism does not emerge directly but is inferred from the fact that prices appear to play no necessary role in manpower projections. That is, the critics argue that since factor prices are not explicitly considered, this must imply zero substitution elasticities or a fixed coefficient production function.

Yet, there is nowhere in the concept of manpower planning the requirement that fixed input coefficients be assumed. If anything, the opposite is true in the sense that both the structural characteristics of the economy and the technological conditions of production are presumed either to change or be manipulated by policy over time. This implies that the critic's argument is erroneous in several respects: First, from a methodological viewpoint, the transformation algorithm should be carried out in technical "space"--i.e., should explore the technical links and alternatives between inputs and outputs. The reasons

are a) that changes in manpower requirements stem from shifts in the production function as much as they do from (economically-induced) movements along the existing technological frontier; b) manpower utilization is determined by interactions of projected supplies and hence the criteria for evaluating such patterns must be independent of existing supply conditions; and c) the policy implications of technical change will not otherwise be visible. This means that while factor prices may be determined by planning action, their magnitudes in the base year of the plan are not considered as primary ex ante determinants of factor use patterns.[6]

Second, whether there are "many" or "few" alternative technological patterns of manpower utilization at given levels of output is a question to be answered empirically. It should not be considered a postulate or assumption upon which the analysis is based without critical examination. Stated differently, it means that the parameters of the production function are unknowns to be determined through planning analysis, not given a priori. We believe that the magnitude of those parameters are what is at issue, not whether prices play a role in determining manpower requirements.

In this light, it can be argued that the use of productivity rates in specifying manpower goals is conceptually appropriate because it may be viewed as a poorly specified, surrogate measure of the production function. It is methodologically limited, however, because it is simply a summary measure of the myriad factors affecting manpower utilization patterns, i.e., it accounts for changes in the scale of firms and

industries, changes in the amount and quality of other productive inputs, changes in managerial efficiency, and in certain cases, changes in qualitative standards. It also indicates changes in the state of technological knowledge, and shifts in the rate at which such knowledge is incorporated into the productive process. Furthermore, the productivity rate reflects changes in factor supply conditions.

As such, productivity reflects both too much and too little. On the one hand, it would be desirable to have a procedure that is independent of factor supply. On the other hand, it would be desirable to separate the differential impacts of the changes summarized above, because each is likely to assume greater or lesser importance over the course of a given planning period, and because each has rather different policy implications. One way out of this impasse is to insist that manpower planning be based explicitly on a production function--i.e., the technical relationship between input sets and (maximal) output, and not simply on some surrogate form. As before, this suggestion has important implications for the manner in which the state of the art might be improved. Movement in this direction will not be useful, however, unless there is some agreement on the conceptual framework for planning and an institutional capacity to use such an analytic strategy for planning purposes.

Analysis of Human Resource Supply

The formulation of manpower plans requires the analyses of both goal functions and human resource supply functions. While these elements may be treated separately for analytic convenience, they are

of course joined together in order to assess interactions and draw policy inferences. Our discussion of the supply side of a manpower plan, as on the goals side above, is predicated on two general propositions: first, the nature and scope of supply estimates in manpower planning practice is limited, or frequently absent, for reasons relating to both technique and the decision environment. Second, our capacity to prepare useful supply estimates is limited by the perception of the supply process and the relevant knowledge base. Each point is discussed in turn.

To begin with, our earlier examination of manpower planning practice in the United States showed that relatively few plans are complete.[7] In particular, estimates of real human resource supplies to given occupational functions, sectors or areas were rarely provided, (or compared to requirements) either under ceteris paribus conditions or as a result of recommended policy changes. This fact led us to infer that policy responses or outcomes fail to achieve balance, and that manpower forecasts have a tendency to escalate requirements for changes in schooling capacity. These inferences raise important questions about the wisdom of policy acts taken in reference to manpower projections as well as something about the perception of the role of such criteria in policy formation.

It is possible, of course, to suppose that the omissions of supply analysis in forecast models reflects little more than technical lacunae, i.e., the absence of data, skilled analysts, etc. That such factors constrain the policy process is unquestionable, but it is not clear that

they are always the most important constraints.[8] Indeed, there is ample reason to suppose that the weakness of manpower plans on the supply-side relates as much to the policy environment as it does to technical capacity. In fact, it may be that they are a product of the environment--characterized as it is by both an increasing number of educational institutions and organized occupational groups. Moreover, the decision environment is not only pluralistic, but it is in most cases highly decentralized, involving in the typical case numerous different Federal agencies, State, regional, and local jurisdictions, etc.

In these circumstances, the use of manpower criteria may take two somewhat different forms. On the one hand, individual producers may project manpower requirements in an effort to rationalize (or justify) program expansion. Supply estimates here, if they are made at all, are typically limited to the capacity of the individual producer to satisfy changing needs. On the other hand, and perhaps more common, the decision environment creates a need for policy coordination. A common premise is that the formation of policy criteria in the form of manpower forecasts serves to coordinate the activities of multiple system participants. This premise typically assumes that producers and individual entrants to the labor market can and will interpret the policy criteria, i.e., manpower requirements, in terms of individual adjustments at the margin. For a variety of reasons, this appears to be a dubious assumption.

The principal difficulty is that the assumption requires agreement on the nature of the policy criteria and sufficient responsiveness of

the supply system to goal structures. Responsiveness, in turn, requires disaggregate supply information and a sufficient set of incentives (penalties and rewards) to ensure that the information is both used and useful. Unfortunately, these conditions are rarely met. Our experience suggests that they are not met because they require an institutional mechanism for achieving agreement or consensus, and that few such mechanisms exist. In the absence of appropriate institutional mechanisms, it is likely that detailed, disaggregate supply estimates enhance the probabilities of conflict among suppliers with respect to relative allocations, jurisdictional boundaries, and the like. It appears to us, moreover, that this possibility explains why disaggregate supply data are rarely available for analytic purposes. The exigencies of the policy environment, in other words, appear to pressure manpower planners to limit projections to the requirements side and assume that producers will respond in appropriate ways, without necessarily evaluating the form or extent of those responses.

While this argument is surely predicated on a set of broad generalizations, we are nonetheless persuaded that it has an important message. For one thing, it implies that even technically sophisticated projections of requirements may produce less than optimal policy responses if there is no institutional mechanism for linking the decision process. For another, it implies future research must probe both the kinds of institutional arrangements which may fill this gap in the planning art and the nature of the policy response mechanism. This latter point requires further elaboration.

It is important to recognize explicitly that even with appropriate institutional linkages, our capacity to estimate supply conditions is limited by our perception of the policy response mechanism. As before, this stems from the fact that the theoretical structure upon which most estimating techniques are based is limited. In this case, the difficulties stem from the highly individualistic choice mechanisms imbedded in the economic theory of the labor market. As is well known, individual decisions relating to work/leisure and investment in human capital, adjudicated in the context of the market, lead theoretically to a set of desired individual and social outcomes. To be sure, there are theoretical allowances made for Keynesian impacts on the labor market stemming from changes in the aggregate level of demand. Moreover, the long line of empirical research on labor force participation, viz., on discouraged workers effects, allows for endogeous or induced labor market responses to changes in the level of economic activity. But these are generally assumed to be the exceptions to the rule. The maintained hypothesis is that individual preferences count, preferences are revealed in market valuations, and accordingly, market variables can be used to explain response patterns.

But we must recognize that a set of decision processes which affects human resource supplies differs substantially from the decision mechanism upon which neo-classical theory is based. It is difficult to imagine, for instance, that the characteristics of the University system in this country reflect policy responses to a set of aggregated individual preferences or, indeed, that decision processes and response

patterns behave "as if" they were exclusively a function of such preferences. Rather, they reflect a set of collective decisions, particularly at the institutional level, which frequently may differ from individual judgments. More important, these collective decisions may affect individual responses through the available choice set, i.e., produce endogenous responses as a function of relative availabilities. Briefly put, the principal implication is that labor market information, including manpower projections, may be interpreted differently by individuals and supply institutions, and/or acted upon in differential fashion. Structural imbalances may occur as a function of these differences in decision outcomes. The imbalances are a supply-side analogue to the Keynesian theory of unemployment stemming from differential decision outcomes (of savers and investors) on the (aggregate) demand-side of the market.

Such imbalances create a set of social costs, the magnitude of which remain to be calculated but doubtless are great. The minimization of these costs is a raison d'etre of the kind of manpower planning activity envisaged here. In order to facilitate that planning it is essential that we understand how both institutions and individuals respond to changes in (or projected changes in) demand conditions. Unfortunately, there is very little in the present knowledge base which permits inferences in this regard.[9] This is an area in which additional research is required.

IV. The Institutional Requisites for Policy Planning

The argument that the policy value of manpower planning cannot be enhanced in the existing institutional framework deserves some positive

suggestions for institutional alternatives. It is obvious that two primary requisites of a policy relevant planning process are the means for linking a diverse set of policy making and operating institutions in a more direct, systemic relationship than is afforded by a market mechanism, and the specification of institutional responsibilty for rationalizing and coordinating the behavior of component institutions.

Whether these conditions can be met in the pluralistic and decentralized economic and political system of the United States is problematic at this juncture, yet there appears to be no rational basis for the negative view that prevails. Two recent actions in the Congress of the United States suggests, on the contrary, a movement toward the requisite conditions. One is the recent establishment of the Congressional Budget Office as a legislative counterpart to the Office of Management and Budget in its role in policy analysis. The other is the proposal sponsored by Senator Humphrey and others for the establishment of a national economic planning board and a Council on Economic Planning. These institutions could provide a long-term priority framework for the short-term analysis of the CBO, the OMB, the CEA and similar agencies. As the Humphrey Bill suggests:[10]

> . . . the United States has no single governmental body engaged in the systematic and comprehensive formulation of national economic goals and policies . . . (The) formulation of long-term national economic goals, the identification of available and potential labor, capital and natural resources, and recommendations for policies to reconcile goals and resources would enable the Federal Government to rationalize its own impact on the national economy. These activities would provide assistance to State and local governments and the private sector by permitting action with greater knowledge of the nation's economic direction.

Although the flow of priority criteria and strategic information from the Federal level should act to rationalize policy analysis at State and local levels, local governments can be stimulated to replicate the planning structure of the Federal government and to interact with that system rather than react to it. If a stimulus is needed to encourage regional and local planning, it is obviously available in the magnitude of current revenue sharing and other transfer payments, and reflected in the conditions we have imposed on economic aid to developing countries and the Federal stipulation of planning in health and manpower programs at home.[11] The failure of sectoral planning in the domestic case does not reflect a rejection of planning but the only possible outcome of an institutional arrangement with no systemic characteristics and no source of criteria for specifying dominant, exogenous variables.

Initiatives such as the Humphrey proposal respond to both planning requisites--the stimulus to systemize information flows and decision criteria, and an institutional responsibility to explore alternative ends and means in a long-term perspective. It seems evident that the current necessity to respond to the social costs of economic growth, to the trade-offs between unemployment and price stability, and to the long-term implications of energy and environmental policy have raised the public sensitivity to the limitation of ad hoc decision making and increased the public awareness of the policy value of long-term planning.

References

1. Kelley, S.C., Chirikos, T.N. and M. Finn. Manpower Forecasting in the United States: An Evaluation of the State of the Art (Columbus: Center for Human Resource Research, The Ohio State University, 1975).

2. U.S. Department of Labor, Bureau of Labor Statistics, Tomorrow's Manpower Needs (Washington, D.C., 1969), Vols. I-IV.

3. Cf., Lecht, L.A. Manpower Needs of National Goals in the 1970's (New York: Frederick Praeger, 1969) and Bezdek, R. Long-Range Forecasting of Manpower Requirements (New York: IEEE, 1974).

4. Cf., Ferber, R. "Consumer Economics, A Survey," Journal of Economic Literature. Vol. II, No. 4 (December, 1973), pp. 1930-42.

5. See, in particular, Anderson, C. and M. Bowman, "Theoretical Considerations in Educational Planning," in Adams, D. (ed.) Educational Planning (Syracuse: Syracuse University Press, 1964), pp. 4-46; Ahamad, B. and M. Blaug (eds.) The Practice of Manpower Forecasting (San Francisco: Jossey-Bass, 1973), especially Chapter I; and Psacharopoulos, G. "Substitution Assumptions Versus Empirical Evidence in Manpower Planning," De Economist Vol 121, NR 6 (1973), pp. 609-25.

6. This view has obvious implications, of course, for goals relating to the distribution of income, but a full discussion of the point lies beyond the scope of this paper.

7. Kelley, Chirikos and Finn, op cit., pp. 120-210.

8. Data problems appear to stem from the absence of an institutional base for planning. Our earlier analysis showed, for instance, that a large number of manpower plans were formulated on an ad hoc basis; they were one-shot affairs carried out under the auspices of special task forces, committees, etc., established expressively for those purposes. Such procedures preclude the development of technical capability and experience, they exacerbate the problem of data limitations, and they rarely establish a mechanism for improving data flows over time. Furthermore, they do little to create a flow of human capital to the decision process itself.

9. Recent research by R.A. Freeman is perhaps an exception to this point. Freeman's failure to include a broad set of institutional decision variables, however, makes his work somewhat less relevant than it might otherwise be. It perhaps also weakens his general conclusion that there is a high degree of responsiveness to changes in labor market conditions for high-level manpower, and that this responsiveness produces a relatively costless adjustment process. See, for example, his "Supply and Salary Adjustments to the Changing Science Manpower Market: Physics, 1948-1973," American Economic Review Vol LXV, No. 1 (March, 1975), pp. 27-39.

10. "Senate Bill 94:1795" Congressional Record Vol. 121, No. 82 (May 21, 1975)

11. It seems paradoxical that no stimulus to private sector planning appears to be required, as the most extensive, on-going planning effort is in that sector--in particular, in the major national and multi-national corporations that dominate private decision making.